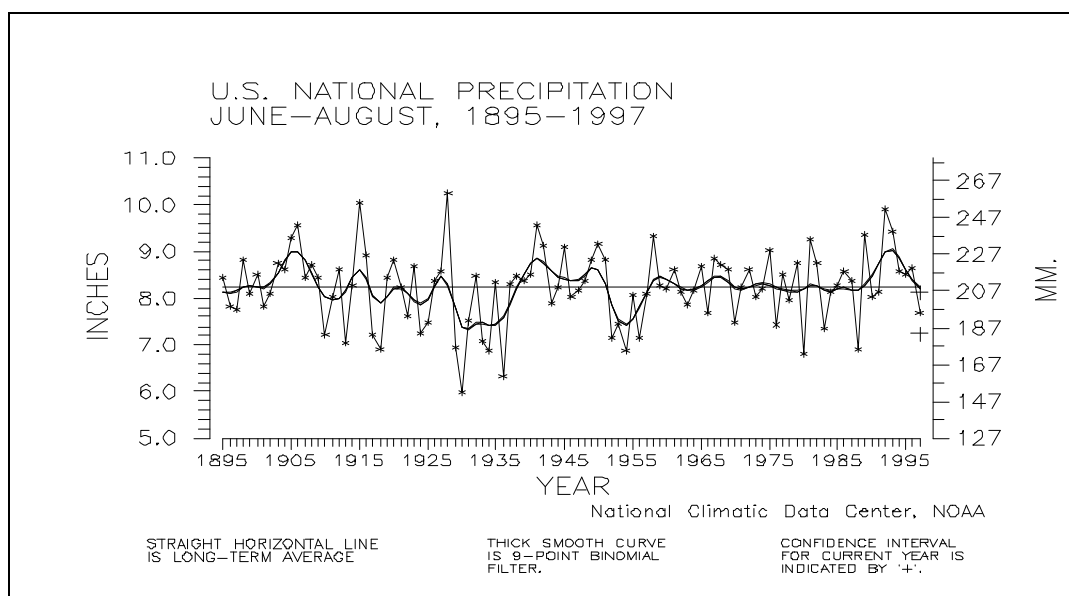
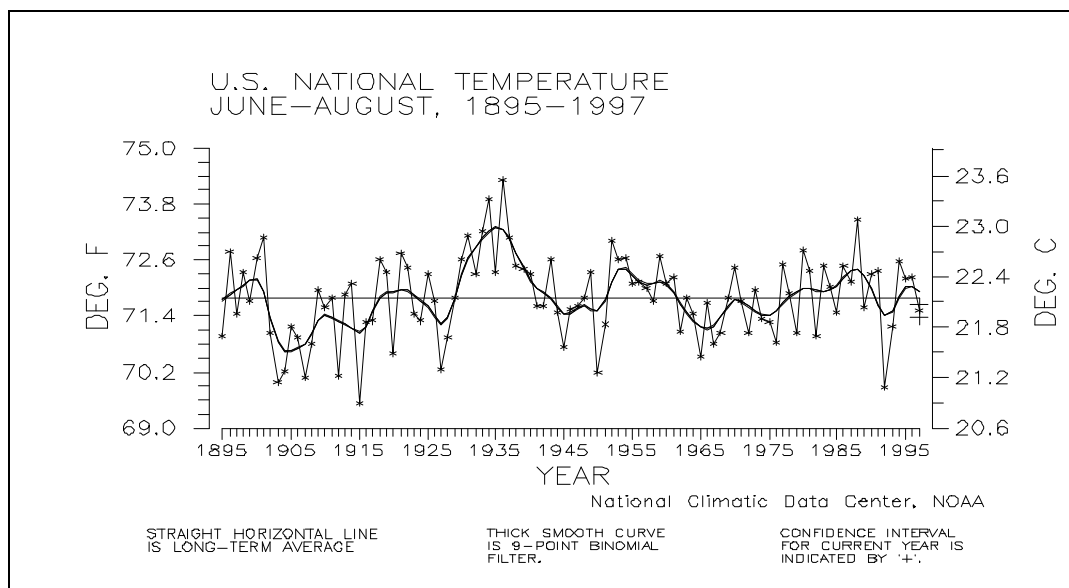


# Monthly Activity Report

August 1997

## National Climatic Data Center

A National Resource for  
Climate Information



Based upon preliminary data, summer (June–August) 1997 was the 37th coolest such period on record (top figure). Nearly five percent of the country had much cooler than normal temperatures while less than two percent of the country was much warmer than normal.

Preliminary precipitation data indicate that summer 1997 was the 24th driest such three-month period since records began (bottom figure). Over 11 percent of the country was much drier than normal while just over 7 percent of the country was much wetter than normal.

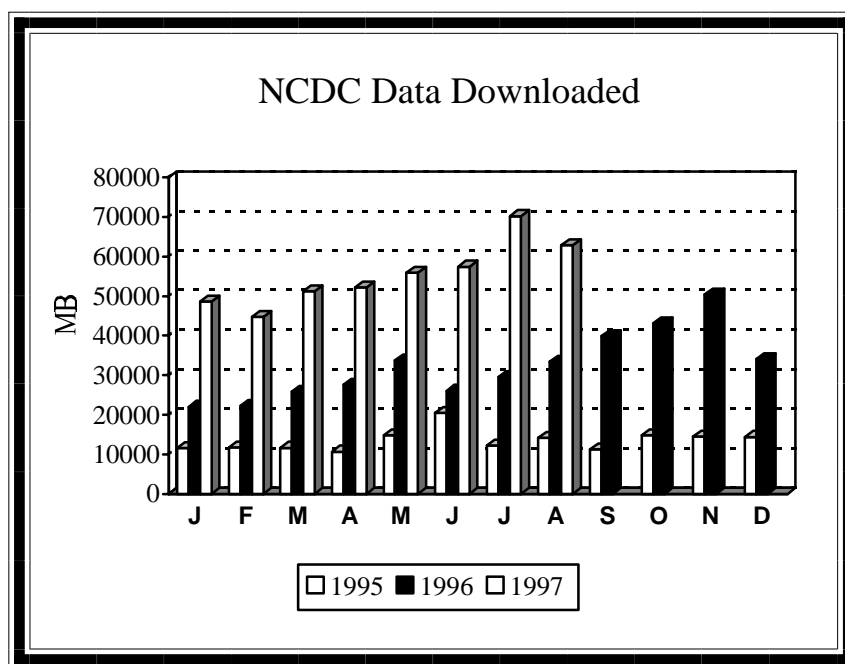
## DIRECTOR'S HIGHLIGHTS

### Decline in Customer Services

The summer seasonal decline in the National Climatic Data Center (NCDC) customer service activities that began in May 1997 continued through August. A ten percent decline in revenue from data sales was recorded from July 1997. August 1997 orders declined by 29 percent and revenue declined by 15 percent when compared to August 1996. Customer letters and telephone calls received by customer services declined by 18 percent and 13 percent, respectively, as well. Despite the one month comparative decline, customer telephone calls increase by two percent for Fiscal Year 1997 when compared to the same period in 1996. Overall, data sales are down by 15 percent this FY compared to FY 96.

### Excellence in Government Fellows Program

Dr. Thomas C. Peterson of the National Climatic Data Center (NCDC) has been selected to participate in the Excellence in Government Fellows Program. Dr. Peterson's selection places him and the NCDC at the level of those who are committed to improving the performance of government, seen as the current and future leaders of their agencies, willing to explore new ways of



working to achieve results, demonstrating high achievement and leadership potential, and committed to personal and professional growth.

### World Wide Web Usage Sizzles this Summer

The National Climatic Data Center's world wide web page continues to deliver data, information, and products to users at a breakneck pace. In July 1997, over 100,000 users accessed over 1.3 million files and downloaded over 70 gigabytes of data and information, equating to almost a 100 percent increase in the amount of files and data delivered when compared to July 1996. A new NCDC monthly record for data delivered was set in July 1997, surpassing the previous high of 57 gigabytes in June 1997.

### Customer Order Management Processing System (COMPS)

COMPS underwent testing at the National Oceanographic Data Center (NODC) during August and was also successfully installed at the National Climatic Data Center (NCDC). The National Geophysical Data Center (NGDC) plans to install the COMPS client software with assistance from Unisys contract personnel in early September. SAO personnel are completing the Build Two System/Subsystem Specification with help from COMPS team members. Unisys continues to monitor the help desk and respond to problems as necessary.

### AWIPS/NOAAPORT

Planning for NCDC's NOAAPORT Receive Site (NRS) continues with the creation of an Advanced Weather Information Processing System (AWIPS) Executive Steering Group that will manage the overall AWIPS project for NCDC. Key tasks and issues have been identified and working subgroups are being formed. A workshop with the National Weather Service (NWS) Office of Meteorology and the Science Service Divisions later this year will determine the NWS data needs and the method of distribution; the NWS is expected to be an important user of retrospective AWIPS data.

### Data Rescue Activities

In conjunction with the National Geophysical Data Center and the National Oceanographic Data Center, data sets that require rescuing are being identified. In anticipation of 1998 Data Rescue funding, the high priority data sets are being selected. The identification and selection process is described in the Data Rescue Plan and Priorities document being circulated for coordination.

### Unisys Software Migration Project (SMP)

In August 1997, the National Climatic Data Center assumed the responsibility for the Unisys Software Migration Project (SMP). NCDC's first

task is to complete the Discovery Phase by the end of calendar year 1997 that includes applications, mainframe functionalities, and computing capacity surveys. The SMP project is on schedule with survey activities well underway in all three areas. The entire migration effort is projected to be completed before the end of calendar year 1999.

### Major Deliverable for PC CLISERV Completed

NCDC has added an on-line version of the "Index to Surface Weather Observations" to the personal computer (PC) Climate Services (CLISERV). This popular publication contains inventories to the page level of the estimated 100 million hourly surface weather manuscript records that are available at NCDC for the period beginning in the 1800s through 1981. The on-line version allows users to determine the existence of surface weather observation forms, meteorological summary forms, barograms, thermograms, triple register charts, humidity recorder charts, and radar logs for thousands of primary weather sites across the United States. Future work will include incorporating similar inventories for the 1980s and 1990s from NCDC's Automated Records Check-in (ARC) system. CLISERV is NCDC's centralized system that allows on-line access to all available metadata for NCDC's data bases.

### Flood Imagery Provided for Report to Vice President Gore

The National Climatic Data Center provided a series of Geostationary Operating Environmental Satellite (GOES) infrared and visible satellite imagery to be included in a report to the Vice President as part of the Global Disaster Information Network initiative. The GOES imagery depict a strong subtropical jet stream hitting Oregon on February 6-7, 1996, causing very heavy rains and flooding in the western part of the state.

# CLIMATE DATA AND INFORMATION SERVICES

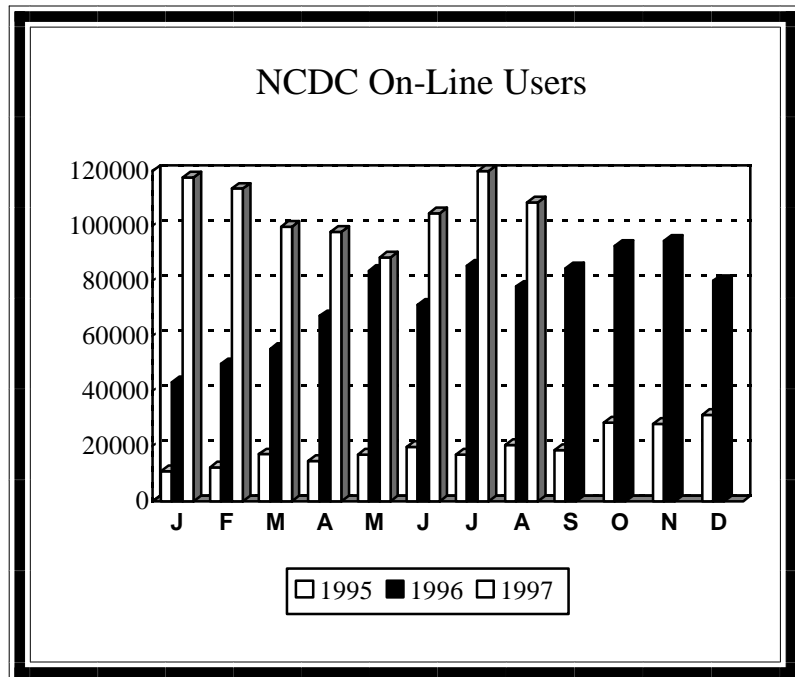
## ♦ Data and Information Distribution

### NEXRAD National Mosaic Reflectivity Images On-Line

The National Climatic Data Center (NCDC) has placed National mosaic reflectivity images on-line for web users to browse. The images are produced by Weather Services International (WSI) and provided through the Global Energy and Water Cycle Experiment Continental-Scale International Project. The images may be selected for viewing and downloading through the NCDC homepage from the Next-Generation Radar (NEXRAD) main directory.

### Satellite's Eye Art Gallery On-Line

The Satellite's Eye Art Gallery system has been placed on-line on NCDC's web page. The gallery provides a montage of information concerning specific meteorological and geophysical events including satellite imagery, image information, event descriptions, and educational satellite and meteorological articles. Currently, hurricane, tornado, and fire categories are available with the remainder to be completed over the next several months. Data and information about the selected events will include Geostationary Operating



Environmental Satellite (GOES) and polar orbiting satellite images, weather maps, Next Generation Weather Radar (NEXRAD) imagery, narrative descriptions of the event, and articles addressing imaging techniques and weather topics.

### Severe and Extreme Weather Climatology Web System

The National Climatic Data Center has placed a new world wide web system on-line which provides over 40 climatological maps and tables for severe and extreme weather. The system that includes hurricanes, tornadoes, temperature extremes, and heavy rainfall is accessible through NCDC's homepage.

### The Spring of 1997, Reviewing Four Significant Weather Events

The National Climatic Data Center (NCDC) completed Technical Report 97-03: "The Spring of 1997, Reviewing Four Significant Weather Events." The report describes the early March flooding and tornadoes in the Ohio and Mississippi Valleys, the March 31-April 1 northeast snowstorm, the April northern plains flooding, and the May 27 Jarrell, Texas, area tornadoes. Data tables, satellite images, Next Generation Weather Radar (NEXRAD) images, rainfall analysis, snowfall analysis, and narrative information are all included in the report that is available in paper copy form and on-line via NCDC's homepage.

### Comparative Climatic Data Publication On-Line

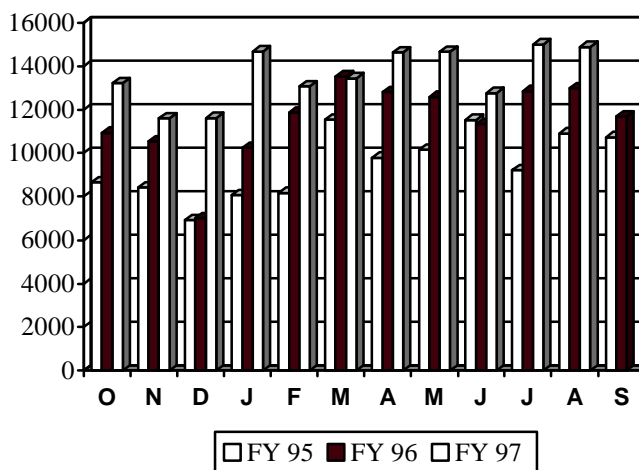
The Comparative Climatic Data Publication is now available on NCDC's homepage under What's New and via the Products and Publications page. The publication presents 16 statistical tables of observed and climatological normals for over 270 major U.S. cities. Tables include monthly highest/lowest temperature of record; mean days with temperatures equal to or less than 32° F; mean days with precipitation, monthly averages of snowfall, wind, sunshine, cloudiness, and relative humidity; and monthly highest wind speed. Tables are also available depicting the climatological normals (1961-1990) of normal daily maximum, minimum and mean

temperatures; normal heating and cooling degree days; and normal precipitation.

### U.S. National Atlas - a NOAA Partnership

George Sharman, National Geophysical Data Center (NGDC), has submitted an Environmental Services Data and Information Management (ESDIM) proposal that lays the groundwork for the three NOAA Data Centers to provide input to the U.S. Geological Survey (USGS) National Atlas of the United States. This atlas was last published in 1970 and is considered the definitive source for geographic information for the United States. The USGS is now embarking on a new National Atlas that will include CD-ROM and WWW products. This proposal establishes the infrastructure and coordination necessary to identify and deliver to USGS the large quantities of environmental data that the three NOAA Data

NCDC Off-Line Customer Contacts



Centers collect, process, and disseminate. Marc Plantico of the National Climatic Data Center (NCDC) will be a co-investigator of this project and will coordinate this work with the climate atlas work already underway at NCDC.

#### ♦ Research Customer Service Group Requests

##### Ruptured Intracranial Aneurysms and Barometric Pressure Data

A team of medical researchers from the University of Iowa's Department of Neurosurgery is using National Climatic Data Center's (NCDC) on-line Climate Visualization (CLIMVIS) system to gather data as part of a research project. The doctors are graphing, plotting, and downloading daily average pressure data from the NCDC CLIMVIS world wide web system for stations in the Iowa area for the 1986-1996 period. The team hopes to correlate fluctuations of daily average barometric pressure with the incidence of ruptured intracranial aneurysms.

#### ♦ Satellite Data Requests

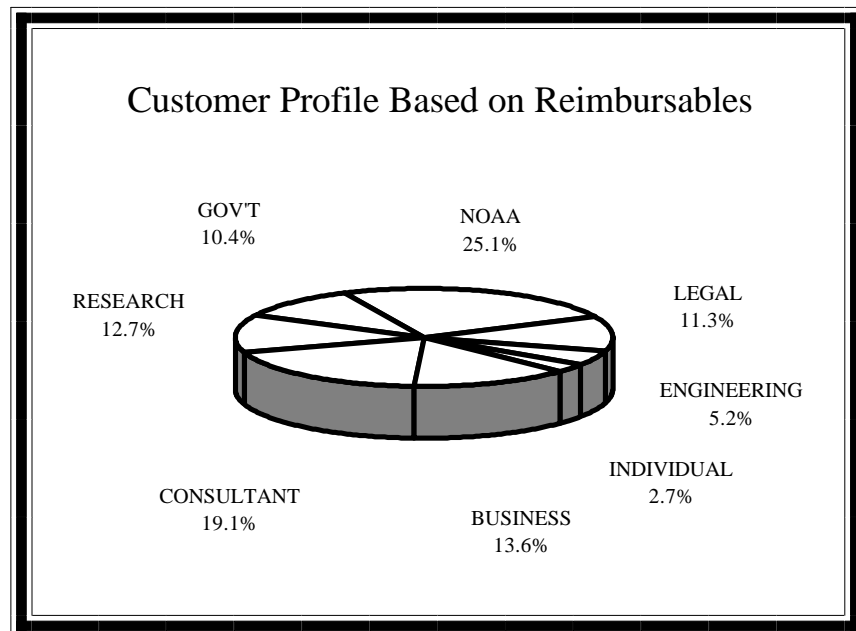
##### Satellite Image Supplied for Guam Plane Crash Study

The National Climatic Data Center (NCDC) supplied the National Weather Service (NWS) Headquarters a hard copy image of the Guam area from 1550 UTC on August 5, 1997. The NWS used the image to help confirm the presence of inclement weather at the time a Korean airlines

flight crashed. NCDC's Satellite Services Group provided an infrared image from the NOAA 14 polar orbiting satellite. The image confirmed significant clouds and possible thunderstorms in the area at the time of the crash.

##### Mystery Oil Spill Investigated

A large pool of oil washed up on the beaches near Mangalore, India, in June 1996, and no one has a clue where it came from. According to local reports, the spill was very severe and has contaminated much of the beach along the southwestern coast of India. Present thinking is that a petroleum refinery located at Mangalore near the coast was the culprit. The Center of Marine Fisheries Research Institute (CMFRI) of India is leading the investigation and has contacted the National Climatic Data Center (NCDC) for assistance. The Center is supplying several 1-km resolution satellite images from NOAA's polar-orbiting operational satellite. It is hoped that the source of the leak can be spotted on the images.



## ♦ Requests from News Media

### Statistics Provided to ABC News

Lightning associated deaths and injuries statistics were provided to ABC News 20/20 Program for an upcoming segment. In addition, Mr. Grant Goodge, NCDC's Data Operations Branch, provided 20/20 with a lightning video from his personal archives.

### Ice Storm Information for the Discovery Channel

The National Climatic Data Center's (NCDC) Research Customer Service Group collaborated with the U.S. Army's Cold Regions Research and Engineering Laboratory (CRREL) to provide information on freezing rain to the Discovery Channel. The information included details on the March 1991 ice storm in upstate New York that was one of the most costly weather events in the history of the state. Various other statistics on annual ice storm costs during the 1990s were also provided. The Discovery Channel is producing a special on freezing rain to be aired during September.

### Storm Warning Relies on Satellite Photos

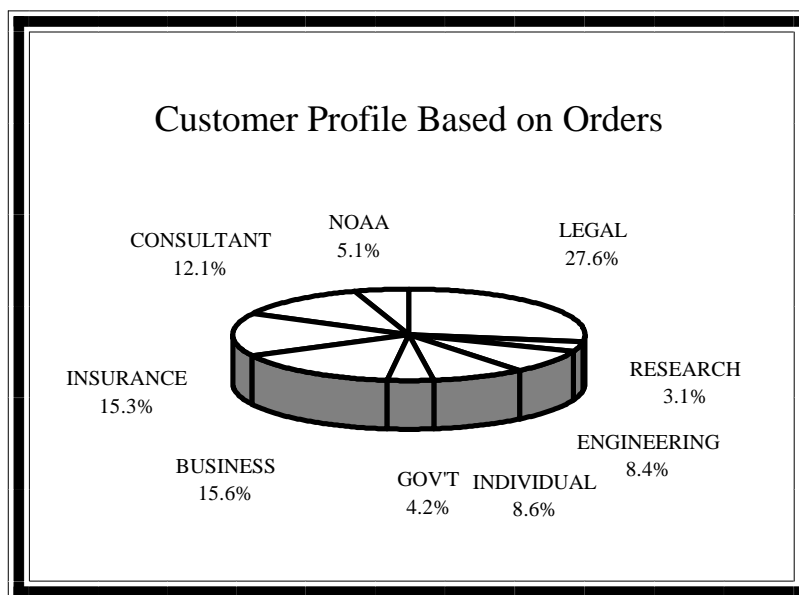
GRB Entertainment in Studio City, California, is producing a new documentary series for the Discovery Channel called Storm Warning that focuses on weather-related disasters and weather phenomena. Several visible and infrared Geostationary Operational Environmental Satellite (GOES) and polar orbiting satellite images created by the National Climatic Data Center (NCDC) Satellite Services Group have

been ordered by the company. The most recent was a color-enhanced infrared image of 1995 Hurricane Erin as it made its second Florida landfall near Pensacola, Florida, on August 3.

## ♦ Interesting Requests

### It's Sometimes Cold

A publishing house in Pennsylvania requested permission to reprint a select number of freeze maps that are contained in the National Climatic Data Center (NCDC) publication *Climatology of the U. S. No. 20, Supplement No. 1*. This publication presents freeze/frost probability tables and maps for all 50 states. The publisher requested nonexclusive world rights, in all languages and for all editions, to reprint the maps as part of a publication they are preparing entitled 100 Greatest Garden Ideas. Permission, with proper credit to NOAA/NCDC, was granted.



### Oklahoma City Federal Building Bombing

In preparation for the upcoming trial of the accused co-conspirator in the bombing of the Alfred P. Murrah Federal building in Oklahoma City, Oklahoma, in 1995, a Federal investigative agency has contacted the National Climatic Data Center (NCDC). The agency requires the weather conditions in Oklahoma City on a day in mid-April 1995 to verify a statement the accused made concerning the type of weather in progress during an event in which he was involved. Hourly surface weather observations, cooperative climate records, and hourly precipitation data under Department of Commerce certification have been provided to the requesting agency.

### Watergate Revisited

CPN-TV in Canada contacted the National Climatic Data Center (NCDC) for help in producing an upcoming documentary. The film deals with the events leading up to the resignation of President Richard M. Nixon, beginning with the bungled break-in of the Democratic National Headquarters in the Watergate Hotel complex. The film makers want to be accurate in their depiction of the various actors, including the type of clothing they were wearing. Hourly surface weather observations provided to the production company indicated that the weather on February 4, 1972, was very cold and windy.

### Fuel Oil Production

A British design engineer contacted the National Climatic Data Center (NCDC) to obtain meteorological data for an energy project based in the U.S. The engineer is trying to produce a methanol-based fuel from sugar beets grown in the desert southwest. The plants will be irrigated with desalinated sea water piped in from the Gulf of California. After harvesting, the crop is synthesized chemically into a methanol based fuel. NCDC provided daily evaporation data for

California, Nevada, Arizona, and New Mexico for the period 1993-1996.

## ♦ Technology Applications

### Scalable POWERparallel System Arrives

The IBM Scalable POWERparallel (SP2) RISC system has been installed and the skills transfer training completed. Miguel Salgado, McBride and Associates, provided an overview of the SP2 system and the tremendous potential for providing high speed access between current data holdings on the Hierarchical Data Storage System (HDSS) and the processing platforms where data are massaged, extracted, and placed onto desired media for transfer to customers. The SP2 system will be used to run applications that are currently on aging, outdated workstations and to expand high-priority ingest processing for surface data sets. This system will also be a primary target for application systems being migrated off the Unisys mainframe computer over the next two years.

### GOES Image Processing System (GIPS)

The National Climatic Data Center has completed preliminary work on a web based interface to McIDAS-X and to the real-time Geostationary Operating Environmental Satellite (GOES) data at the University of Wisconsin, Space Science and Engineering Center. GIPS will provide the Satellite Services Group with a faster and easier means of producing tailored real-time GOES imagery of major weather events. The new system will greatly reduce the amount of time spent creating GOES imagery for NCDC's on-line images, technical reports, and customer requests. It will allow users with little or no McIDAS experience the capability to create GOES imagery from the real-time archive that currently provides four days of GOES-8 and six hours of GOES-9 data.



## SCIENTIFIC AND PROFESSIONAL ACTIVITIES

### ♦ Working Groups/Committees/Meetings

#### World Climate Research Programme (WCRP) Review and Assessment

NCDC's Senior Scientist, Thomas Karl, attended the 17-year review of the World Climate Research Programme (WCRP) in Geneva, Switzerland. Karl presented an invited paper on "Climate extremes and natural disasters: Trends and loss reduction prospects." The paper provided information on what we know today and suggestions for reducing our uncertainties in the future. A set of recommendations from the meeting, including the area of data management and observations, will be forthcoming.

#### Twelfth Session of the Commission on Climatology

National Climatic Data Center (NCDC) Acting Director, Kenneth D. Davidson, along with several other NOAA staff, participated in the Twelfth Session of the Commission for Climatology (CCI) meeting in Geneva, Switzerland. The U.S. delegation recommended review and discussion of the CCI Terms of Reference, discussion of the entire World Meteorological Organization (WMO) climate activities, implementation of Climate Information and Prediction Services (CLIPS), methods for reducing costs, and WMO's contributions of the Commission in support of Intergovernmental Panel on Climate Change (IPCC), Framework Convention on Climate Change (FCCC), World Climate Research Program (WCRP), World Climate Impact Program (WCIP), and Global Climate Observing

System (GCOS). NCDC will stop monitoring the CLIMAT and CLIMAT TEMP data and will transfer the printing and distribution of the *Monthly Climate Data for the World* (MCDW) and *World Weather Records* (WWR) to the WMO Secretariat. NCDC will continue to perform the processing with WMO doing the printing and distribution.

Mr. Davidson will be serving on the WMO Advisory Working Group; independent rapporteurs from the NCDC will be: Michael Crowe, Baseline Data Sets; Thomas Peterson, Statistical Meteorology for Climate; and Kevin Gallo, Urban Climatology.

#### NESDIS/NCDC Working with Russian Research Institute of Hydro Meteorological Information

The National Climatic Data Center's (NCDC) August L. Shumbera, Jr., was in Obninsk, Russia, August 16-26, 1997, as part of the U.S. delegation working in coordination with Russia on a plan of data exchange and cooperative research activities for 1998 and beyond. These activities are being carried out under Working Group VIII of the U.S. - Russian Bi-Lateral Agreement on Cooperation in the Field of Protection of the Environment and Natural Resources. The outcome of the meeting is to begin the activity of rescuing some 10,000 tapes of data. In addition, the procedures to extract precipitation data from the data set that will be used to prepare a comprehensive U.S. - Russian precipitation baseline data set for climate and global change research will be initiated (a project approved and funded by NOAA's Office of Global Programs).

## ♦ Visitors

### NCDC Meets with CIA's Office of Transnational Issues

National Climatic Data Center (NCDC) personnel met with Rob Blevins of the CIA's Office of Transnational Issues. This office is responsible for global analysis of current and past weather events and their affects on agriculture, politics, etc. Discussions included global surface data and global surface normals--what NCDC can provide and NCDC's future plans. Also discussed was global geostationary satellite data--access to Geostationary Operational Environmental Satellite (GOES) data and the potential for access to Geostationary Meteorological Satellite (GMS) and Meteorological Satellite (METEOSAT) data. The CIA is very interested in a closer relationship with NCDC and the Federal Climate Complex as the CIA's main source of climatic and satellite data. Further discussions are planned.

## ♦ Publications

### CODATA Conference on Scientific and Technical Data Exchange

Two abstracts from NCDC and Russian co-authors were accepted to be presented at the Committee on Data for Science and Technology (CODATA) Conference scheduled for December 15-17, 1997, in Bethesda, Maryland. The papers will address the U.S. - Russian climate data exchange and the contributions of these data. In addition, the papers will discuss the integration of data in the preparation of global baseline data sets for research and climate monitoring; the rescue of over 100 years of Russian precipitation data; and the preparation of a U.S. - Russian precipitation data set for climate research.

### NOAA Webshop 97

Dee Dee Anders. NCDC's Climate Applications Branch, submitted two abstracts to the third annual

NOAA Webshop 97 Conference that is sponsored by the NOAA ESDIM Program. The first abstract is entitled NOAA National Data Centers' On-line Store; the second is entitled Web CliServ: On-line Access to NCDC Data and Metadata.

### CLISERV in Commerce People

An article describing NCDC's on-line Climate Services (CLISERV) system is published in the July/August issue of Commerce People. The article describes the work performed under a Department of Commerce Pioneer Fund Grant to bring world wide web access to NCDC's diverse metadata files. CLISERV allows on-line queries to NCDC metadata from a single access system.

### Paper Submitted for AMS 10th Conference on Applied Climatology

A paper entitled Visualization of NOAA's Environmental Data for Climate Applications co-authored by Dan Manns and Wayne Faas was accepted for submission to the AMS 10th Conference on Applied Climatology. The paper presents the Climate Visualization (CLIMVIS) system and how it has become an important means to expand NOAA's data network, making data available for many varied applications, from education, research, government scientist, legal, and businesses worldwide.

### Global Tropospheric Temperatures Compared

Alan Basist, NCDC's Climate Perspectives Branch, and M. Chelliah, National Weather Service's Analysis Branch, have published a "Comparison of tropospheric temperatures derived from the National Centers for Environmental Prediction (NCEP)/National Center for Atmospheric Research (NCAR) reanalysis, NCEP operational analysis, and the microwave sounding unit (MSU)" in the July 1997 issue of Bull. Amer. Meteor. Society. The results, covering the period from 1979-1995, show that the reanalysis provides

substantial improvements over the operational fields. While the agreement between the MSU data and the reanalysis is very good, the reanalysis anomalies are getting progressively cooler relative to the MSU since 1991.

### Scales of Motion

Bert Eskridge of NCDC, with coauthors J.Y. Ku, S.T. Rao, P.S. Porter, and I. Zurbenko, have published "Separating different scales of motion in time series of meteorological variables" in the July issue of *Bull. Amer. Meteor. Society*. The article analyzes various ways of filtering seasonal and synoptic signals out of time series for the purpose of detection of low frequency trends and attribution of causes for the trends. While the newly popular wavelet transform method was found to be superior, the Kolmogorov-Zurbenko filter is shown to have the same level of accuracy but can be applied to data sets with missing observations and is generally much easier to use.

### ♦ Interactions with NOAA Line Offices

#### NCDC Provides Doppler Radar Data to Hurricane Danny Research Team

The National Oceanic and Atmospheric Administration's (NOAA) Hurricane Research Division is conducting mesoscale research on the

formation of the eye associated with Hurricane Danny. The research team collected data and conducted several experiments as Danny moved slowly through Chandeleur Sound toward Mobile Bay on July 18, 1997. Danny's circulation was well within the Doppler range of both New Orleans and Mobile Next Generation Weather Radar (NEXRAD) stations during the course of the experiment. The National Climatic Data Center (NCDC) is providing the detailed NEXRAD Level II data to look at the eye's formation to help analyze and test the tropical algorithms used in the NEXRAD system.

#### Data for National Weather Service (NWS) Forecast Studies

The National Climatic Data Center (NCDC) provided hourly surface data for numerous locations in southern California to the NWS Forecast Office in Oxnard, California. The data, provided over the past several months, are being used in various forecast improvement studies. These include forecasts for high temperatures for the Los Angeles Civic Center, high and low temperatures for Santa Barbara and Ventura County, Santa Ana winds in the area, stratus burn-off at Los Angeles International Airport, and stratus onset and burn-off at Burbank.

## EMPLOYEE ACTIVITIES

### ♦ Personnel Resources

Dave Smith joined NCDC in August 1997 as a Physical Scientist in the Data Base Management Branch. Dave's position will involve overseeing all aspects of NCDC's metadata management.

This will involve station history, inventories, data set documentation, and metadata updates in the Climate Services (CLISERV) system. Dave moved to Asheville in 1981 and worked at the Air Force Combat Climatology Center for 16 years prior to his transfer to NCDC.

## NCDC Data Volumes

